

Far Eastern Entomologist

Дальневосточный энтомолог

Journal published by Far East Branch
of the Russian Entomological Society
and Laboratory of Entomology, Federal
Scientific Center of the East Asia
Terrestrial Biodiversity, Vladivostok

Number 411: 1-9

ISSN 1026-051X (print edition)
ISSN 2713-2196 (online edition)

July 2020

<https://doi.org/10.25221/fee.411.1>

<http://zoobank.org/References/C9950937-A15C-4010-9D60-C357564CDB2C>

FIRST RECORD OF THE ANT GENUS *SYSCIA* ROGER, 1861 (HYMENOPTERA: FORMICIDAE) FROM THAILAND, WITH DESCRIPTIONS OF TWO NEW SPECIES

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Summary. Members of the genus *Syscia* Roger, 1861 are rare ants of the sub-family Dorylinae. Currently, five valid species are known in the genus, but none have been recorded for Thailand. Here we record this genus for the first time from Thailand, and describe two new species, *Syscia chaladthanyakiji* sp. n. and *Syscia reticularis* sp. n., based on the worker caste. Both species were collected from rotting wood in the forest.

Key words: ants, Formicidae, Dorylinae, taxonomy, new species, Southeast Asia.

В. Ятронг, Д. Виватвитая, Ск. Ямане. Первое указание муравьев рода *Syscia* Roger, 1861 (Hymenoptera: Formicidae) из Таиланда с описанием двух новых видов // Дальневосточный энтомолог. 2020. N 411. С. 1-9.

Резюме. Представители рода *Syscia* Roger, 1861 являются редкими муравьями подсемейства Dorylinae. Известно 5 видов этого рода, но ни один из них не указывался ранее из Таиланда. В настоящей статье род *Syscia* впервые приводится для этой страны; по касте рабочих описываются два новых вида: *Syscia chaladthanyakiji* **sp. n.** и *Syscia reticularis* **sp. n.** Оба вида обитают в гниющей древесине под пологом леса.

INTRODUCTION

The ant genus *Syscia* Roger, 1861 belongs to the subfamily Dorylinae with *Syscia typhla* Roger, 1861 as the type species (Roger, 1861). Members of the genus are rare ants which are found in leaf litter, rotting wood, and soil. The genus is distributed in the New and Old Worlds (Borowiec, 2016; Antweb, 2019). Currently, five species are recognized in the genus, among which two species, *S. humicola* (Ogata, 1983) and *S. typhla* Roger, 1861 have been recorded from Asia. So far, no species of the genus have been known from Southeast Asia.

In the course of our examination of ants from Thailand (Tanansathaporn *et al.*, 2018; Jaitrong *et al.*, 2019), we found two new species of the genus *Syscia*, representing the first record of the genus from Southeast Asia. Here we describe these two species based on the worker caste.

MATERIALS AND METHODS

The holotypes and paratypes of *Syscia chaladthanyakiji* **sp. n.** and *S. reticularis* **sp. n.** were pin-mounted dry specimens and compared with high-resolution images of the lectotype and paralectotype of *Syscia honduriana* (Mann, 1922) and the syntype of *Syscia typhla* Roger, 1861 available in Antweb (2019).

Most morphological observations were made with a ZEISS Discovery V12 stereoscope. Multi-focused montage images were produced using NIS-Elements-D-[Sequence6*-Focused] from a series of source images taken by a Nikon Digital Sight-Ri1 camera attached to a Nikon AZ100M stereoscope. Type specimens of each species were measured for the following parts using a micrometer (accurate to 0.01 mm).

The general terminology of the worker ants follows Hölldobler & Wilson (1990) and Bolton (1994). For the important characters of the genus *Syscia* used in this paper, see Borowiec (2016).

The abbreviations used for the measurements and indices are as follows: **HL** – Head length, maximum length of cranium in full-face view, measured from transverse line spanning the anteriormost points of clypeus to that of posteriormost points of cranium; **HW** – Head width, maximum width of cranium in full-face view (excluding eyes); **SL** – Scape length, maximum length of antennal scape excluding basal condylar bulb; **MW** – Mesosomal width, maximum width of promesonotum in dorsal view; **ML** – Mesosomal length, maximum diagonal length of mesosoma in lateral view, measured from posterodorsal border of pronotal flange to posterior basal angle of

metapleuron; **PL** – Petiolar length, maximum length of petiole in lateral view (excluding helcium); **PH** – Petiolar height, maximum height of petiole in lateral view (including subpetiolar process); **PW** – Petiolar width, maximum width of petiole in dorsal view; **PPL** – Postpetiolar length, maximum length of postpetiole in lateral view (excluding helcium); **PPH** – Postpetiolar height, maximum height of postpetiole in lateral view; **PPW** – Postpetiolar width, maximum width of postpetiole in dorsal view; **CI** – Cephalic index: $HW/HL \times 100$; **SI** – Scape index, $SL/HW \times 100$; **PI1** – Petiolar index 1, $PL/PH \times 100$; **PI2** – Petiolar index 2, $PW/PL \times 100$; **PPI1** – Postpetiolar index 1, $PPL/PPH \times 100$; **PPI2** – Postpetiolar index 2: $PPW/PPL \times 100$; **WI** – Waist index, $PPW/PW \times 100$.

Abbreviations of the type depositories are as follows: **MHNG** – Muséum d’histoire naturelle, Geneva, Switzerland; **SKYC** – Seiki Yamane Collection, Japan; **THNHM** – Natural History Museum of the National Science Museum, Thailand.

DESCRIPTIONS OF NEW SPECIES

Syscia chaladthanyakiji Jaitrong, Wiwatwitaya et Yamane, sp. n.

<http://zoobank.org/NomenclaturalActs/87EB2736-E74E-49C9-83D3-C51331DC83AE>

Figs 1–6, 11

TYPE MATERIAL. Holotype – worker (THNHM-I-05483, THNHM), **W Thailand:** Tak Province, Umphang District, Thung Yai Wildlife Sanctuary, Kangae Ki, Head Quarter, 26.II 2016, W. Jaitrong leg., Colony no. TH16-WJT-0145. Paratypes: twenty workers, same data as holotype (THNHM-I-05484, THNHM-I-19536 to THNHM-I-19551, and THNHM-I-20300 to THNHM-I-20302, MHNG, SKYC, THNHM); nine workers, same colony as holotype collected by Sk. Yamane, TH16-SKY-113 (SKYC, THNHM).

OTHER MATERIAL EXAMINED. **W Thailand:** 2 workers, Tak Province, Umphang District, Thung Yai Wildlife Sanctuary, Huai Nam Kheao, 23.VI 2015, W. Jaitrong leg. (THNHM). **Central Thailand:** 12 workers (THNHM-I-14185, SKYC, THNHM) and 1 dealate queen (THNHM-I-14186, THNHM), Nakhon Nayok Province, Muaeng District, Khlong Maduea, 28.X 2019, W. Jaitrong leg., colony no. TH19-WJT-10; 5 workers (THNHM-I-14187, THNHM), Nakhon Nayok Province, Pak Phli District, Na Hin Lat, Wang Muang Waterfall, 30.X 2019, W. Jaitrong leg., TH19-WJT-32.

DESCRIPTION. WORKER (Figs 1–3, 11)

MEASUREMENTS. *Holotype:* HL 0.66; HW 0.53; SL 0.30; MW 0.43; ML 0.86; PL 0.33; PH 0.36; PW 0.33; PPL 0.46; PPH 0.43; PPW 0.46; CI 80; SI 56; PI1 91; PI2 100; PPI1 108; PPI2 100; WI 140. *Paratype workers* (n = 10): HL 0.56–0.66; HW 0.46–0.53; SL 0.26–0.33; MW 0.36–0.43; ML 0.76–0.86; PL 0.26–0.33; PH 0.30–0.36; PW 0.26–0.33; PPL 0.40–0.43; PPH 0.36–0.43; PPW 0.40–0.46; CI 80–84; SI 56–63; PI1 89–91; PI2 100; PPI1 100–109; PPI2 100–108; WI 130–150.

Size and color. Medium size (HW 0.46–0.50 mm; ML 0.76–0.86 mm). Body entirely reddish brown; antenna, legs and tip of gaster yellowish brown. Hairs yellowish brown.



Figs 1–3. *Sycia chaladthanyakiji* **sp. n.**, worker (holotype, THNHM-I-05483). 1 – body in profile view; 2 – head in full-face view; 3 – body in dorsal view.

Structure. Head in full-face view rectangular, slightly longer than broad with almost parallel sides; posterior margin weakly concave. Antenna 11-segmented with enlarged apical segment (XI) which is longer than VI–X combined; scape short, not reaching mid-length of head in full-face view; antennal segment II almost as long as broad; III–VI broader than long. Frontal carinae short and narrow, reaching less than half length of head, with head in profile sharply elevated in anterior half, low and vestigial in posterior half. Clypeus short, its anterior margin almost straight. Compound eye and ocelli completely absent. Mandible triangular, its masticatory margin feebly concave and edentate. Mesosoma rather elongate, subrectangular, seen from above almost parallel-sided; in profile view, dorsal outline of mesosoma straight; promesonotal suture and metanotal groove absent; mesopleuron demarcated

from lateral face of pronotum and mesonotum by a distinct suture, but not clearly demarcated from metapleuron. Propodeum relatively long; declivity feebly concave, encircled with a thin rim. Petiole in dorsal view rectangular, slightly longer than broad, almost parallel-sided; in profile view, petiolar node (excluding sternite) longer than high, subrectangular, with weakly convex dorsal outline; subpetiolar process in profile view, subrectangular with its ventral outline concave. Postpetiole in dorsal view clearly larger than petiole, subrectangular, slightly longer than broad; in profile view longer than high, its dorsal outline weakly convex; postpetiolar sternite in profile view low, with ventral margin almost straight, anteroventrally produced as a blunt angle directed downward and forward. Abdominal tergite IV (= first gastral tergite) elongate, in dorsal view almost parallel-sided, its anterior margin almost straight.

Sculpture. Entire body densely with well-defined macropunctures (Figs 1–3, 11). Antennal scape, outer face of mandible and legs with dense fine micropunctures. Legs slightly smooth and shiny.

Pilosity. Body entirely covered with short decumbent and standing hairs.

DEALATE QUEEN (Figs 4–6).

MEASUREMENTS. *Non-type*: HL 0.66; HW 0.56; SL 0.33; MW 0.56; ML 1.06; PL 0.36; PH 0.36; PW 0.36; PPL 0.46; PPH 0.46; PPW 0.50; CI 85; SI 59; PI1 100; PI2 100; PPI1 100; PPI2 107; WI 136.

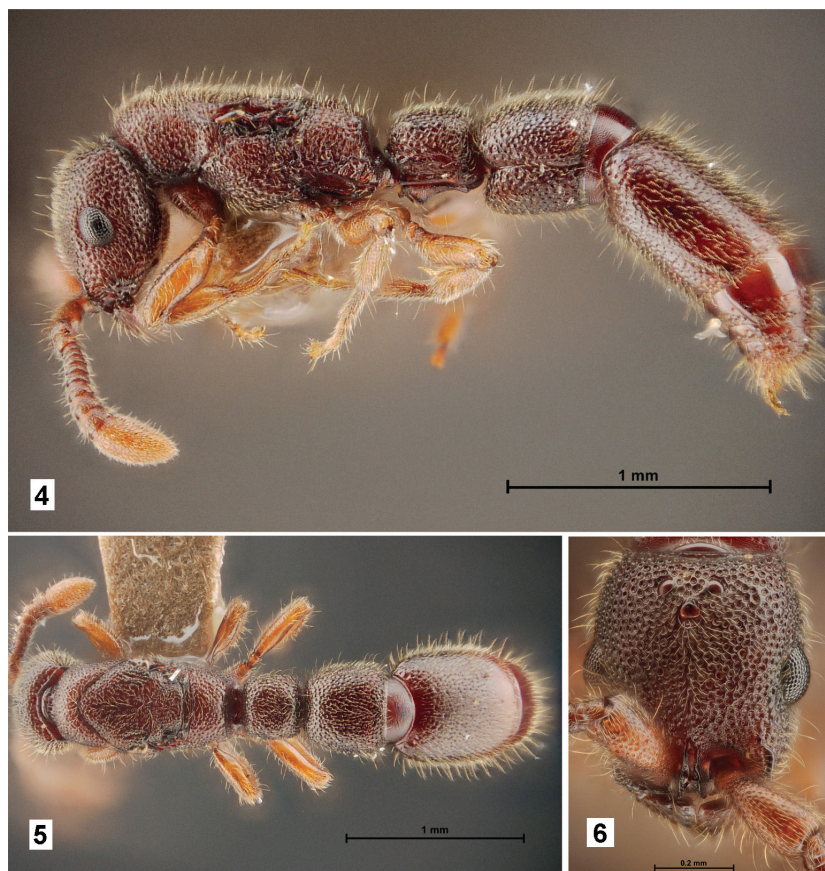
Similar to worker in structure, sculpture and pilosity, with the following conditions that should be noted: body slightly larger; head in full-face view subrectangular, slightly longer than broad; eye present, relatively large, its length almost as long as distance between mandibular base and anterior margin of eye; median ocellus as large as lateral ocelli and located at the level of posterior margin of eyes; mesosoma massive and long, in profile view, with almost straight dorsal outline; mesopleuron broad, demarcated from pronotum and mesopleuron by shallow sutures, without oblique mesopleural sulcus; propodeum relatively short; in dorsal view, pronotum relatively long, with anterior margin roundly convex, posterior margin strongly concave, and lateral margins parallel; parapsidal line distinct but relatively short; mesoscutum flat, trapezoidal, its anterior margin strongly convex, while posterior margin almost straight; mesoscutellum subrectangular, almost as long as propodeum; metanotum very short, represented as a ridge; petiole square, with almost parallel lateral margins; postpetiole subrectangular, slightly longer than broad and broadened posteriorly.

REMARKS. *Syscia chaladthanyakiji* is similar to a Sri Lankan species, *Syscia typhla*, in general appearance of workers. However, *S. chaladthanyakiji* is separated from *S. typhla* by 1) in dorsal view, petiole and postpetiole almost as long as broad (clearly longer than broad in *S. typhla*); 2) with mesosoma in profile view, dorsal outline straight (weakly convex in *S. typhla*); 3) head relatively shorter (CI 80–84 in *S. chaladthanyakiji*; CI 70 in *S. typhla*); 4) stronger sculpturing than in *S. typhla*.

HABITAT. The type series from western Thailand and the colony no. TH19-WJT-10 from eastern Thailand nested in rotting wood on the forest floor. This new species inhabits primary forests from lowland to highland (250–1000 m).

DISTRIBUTION. Thailand (Tak and Nakhon Nayok Provinces).

ETYMOLOGY. The specific name is dedicated to Mr Chaigarest Chaladthanyakij (Uthaiwitthayakhom School, Thailand), who helped us in ant collecting in Uthai Thani and Tak Provinces.



Figs 4–6. *Syscia chaladthanyakiji* sp. n., dealate queen (THNHM-I-14186). 4 – body in profile view; 5 – body in dorsal view; 6 – head in full-face view.

***Syscia reticularis* Jaitrong, Wiwatwitaya et Yamane, sp. n.**

<http://zoobank.org/NomenclaturalActs/DFDCB076-7ADB-43B4-8124-62A74850F4C7>

Figs 7–10

TYPE MATERIAL. Holotype – worker (THNHM-I-02624), **S Thailand**: Nakhon Si Thammarat Province, Noppitam District, Krung Ching Waterfall, 20.V 2003, W. Jaitrong leg., Colony no. WJT03-TH-332 (THNHM). Paratypes: ten workers, same data as holotype (THNHM-I-02625, THNHM-I-19552 to THNHM-I-19559, and THNHM-I-20303, SKYC, THNH).

OTHER MATERIAL EXAMINED. Three workers (SKYC), **S Thailand**, Songkhla Province, Had Yai District, Prince of Songkhla University forest, 17.III 2007, Sk. Yamane leg., Colony no. TH07-SKY-74; One worker (THNHM), **Malaysia**: Malay Peninsula, Selangor, Ulu Gombak, Maschwitz valley, 5.X 2002, Sk. Yamane leg.



Figs 7–9. *Syscia reticularis* **sp. n.**, worker (holotype, THNHM-I-02624). 7 – body in profile view; 8 – head in full-face view; 9 – body in dorsal view.

DESCRIPTION. WORKER (7–9).

MEASUREMENTS. *Holotype*: HL 0.63; HW 0.50; SL 0.30; MW 0.40; ML 0.73; PL 0.30; PH 0.40; PW 0.30; PPL 0.36; PPH 0.43; PPW 0.36; CI 79; SI 60; PI1 75; PI2 100; PPI1 85; PPI2 100; WI 122. *Paratypes* (n = 7): HL 0.56–0.63; HW 0.46–0.50; SL 0.26–0.33; MW 0.36–0.40; ML 0.73–0.76; PL 0.28–0.30; PH 0.40; PW 0.30–0.33; PPL 0.36–0.38; PPH 0.41–0.43; PPW 0.36; CI 79–82; SI 57–67; PI1 71–75; PI2 100–111; PPI1 85–88; PPI2 96–100; WI 110–122.

Size and color. Medium size (HW 0.46–0.50 mm; ML 0.73–0.76 mm). Body dark reddish brown; legs and antenna paler. Hairs pale brown.

Structure. Head in full-face view elliptical, longer than broad; lateral margin convex; posterior margin almost straight. Antenna 11-segmented with enlarged apical segment (XI) which is almost as long as IV–X combined; scape short, when folded back reaching mid-length of head in full-face view; antennal segment II almost as long as broad; III–VI broader than long. Frontal carinae short and narrow, reaching



Figs 10, 11. Gaster of workers. 10 – *Syscia reticulata* sp. n.; 11 – *S. chaladthanyakiji* sp. n.

less than half length of head, in profile sharply elevated in anterior half, low and vestigial in posterior half. Parafrontal ridge prominently produced anteriorly in dorsal view. Clypeus short, its anterior margin weakly convex. Compound eye and ocelli completely absent. Mandible triangular, its masticatory margin with a series of inconspicuous small denticles. Mesosoma rather robust, subrectangular, seen from above almost parallel-sided; with mesosoma in profile view, dorsal outline weakly convex; promesonotal suture and metanotal groove completely absent; mesopleuron not demarcated from metapleuron. Propodeal declivity flat, encircled with indistinct rim. Petiole in dorsal view almost as long as broad, almost parallel-sided; in profile

view, petiole including subpetiolar process clearly shorter than high, subrectangular, convex dorsally, with flattened anterior face. Subpetiolar process in profile subrectangular with its ventral outline concave. Postpetiole in dorsal view slightly larger than petiole, subrectangular, slightly longer than broad; in profile view, postpetiole slightly shorter than high, its dorsal outline weakly convex. Postpetiolar sternite in profile view low, its ventral margin convex; anteroventrally produced as a blunt angle directed downward and forward. Abdominal tergite III (= first gastral tergite) elongate-oval; in dorsal view, its anterior margin clearly concave and lateral margins convex.

Sculpture. Entire body finely reticulate with deep bottoms (Figs 7–10). Antennal scape, outer face of mandible and legs punctate.

Pilosity. Body entirely covered with long decumbent and standing hairs.

REMARKS. *Syscia reticulata* is a distinct species. It can be distinguished from others species by the following characteristics: body entirely reticulate, with deep bottoms (body covered with punctures or shallow fovea in other species); petiole slightly smaller than postpetiole; in profile view postpetiole rounded.

HABITAT. The type series was collected from a rotting wood on the forest floor in a lowland rainforest.

DISTRIBUTION. Thailand (Nakhon Si Thammarat Province) and Malaysia (W Malaysia).

ETYMOLOGY. The species epithet “reticularis” is a Latin word meaning reticulate. This refers to the finely reticulate body of this species.

ACKNOWLEDGEMENTS

We would like to express our gratitude to Department of National Parks, Wildlife and Plant Conservation, who allowed W. Jaitrong to survey ants in Thungyai Naresuan East Wildlife Sanctuary. We thank Mr Yudthana Samung (Mahidol University, Thailand) for his helping in taking pictures of the two new species.

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